Interacting two-fluid viscous dark energy models in a non-flat universe

ABSTRACT

We study the evolution of the dark energy parameter within the scope of a spatially non-flat and isotropic Friedmann-Robertson-Walker model filled with barotropic fluid and bulk viscous stresses. We have obtained cosmological solutions that do not have a Big Rip singularity, and concluded that in both non-interacting and interacting cases the non-flat open Universe crosses the phantom region. We find that during the evolution of the Universe, the equation of state for dark energy ωD changes from ω eff D > -1 to ωeff D < -1, which is consistent with recent observations.

Keyword: Cosmology; Dark energy; Theory; Viscous fluid.